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(54) COMPOSITION FOR RESIST LOWER FILM

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a composition for a film under a resist disposed between the resist and an antireflection film, having both adhesion to the resist and resistance to a resist developing solution and also having resistance to oxygen ashing in the removal of the resist.

SOLUTION: The composition contains (A) a hydrolyzate and/or a condensation product of at least one compound selected from the group comprising compounds of the formula $R1aSi(OR2)4-a$ [where R1 is H, F or a monovalent organic group, R2 is a monovalent organic group and (a) is an integer of 0-2] and the formula $R3b(R4O)3-bSi-(R7)d-Si(OR5)3-cR6c$ [where R3-R6 may be the same or different and are each a monovalent organic group, (b) and (c) may be the same or different and are each a number of 0-2, R7 is O or $-(CH_2)_n-$, (d) is 0 or 1 and (n) is a number of 1-6] and (B) a compound which generates an acid when irradiated with UV

and/or heated.

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] (A) (A-1) Compound $R_1aSi(OR_2)_4$ -a expressed with the following general formula (1) (1)

(R_1 shows a hydrogen atom, a fluorine atom, or a univalent organic radical, R_2 shows a univalent organic radical, and a expresses an integer of 0-2.) And (A-2) compound $R_3b(R_4O)_3-bSi-(R_7)_d-Si(OR_5)_3-cR_6c$ expressed with the following general formula (2) (2)

(You may differ, even if R_3 , R_4 , R_5 , and R_6 are the same, and a univalent organic radical is shown, respectively. b and c) you may differ, even if the same, and the number of 0-2 is shown, R_7 shows an oxygen atom or $-(CH_2)_n$, d shows 0 or 1, and n shows the number of 1-6. from -- a constituent for resist lower layer films characterized by containing a compound which generates an acid with hydrolyzate and a condensate or either and (B) ultraviolet radiation exposure, and/or heating of at least one sort of compounds chosen from a becoming group.

[Claim 2] (A) A constituent for resist lower layer films according to claim 1 characterized by a component being hydrolyzate and its condensate, or either of the compounds expressed with the following general formula (3).

$Si(OR_2)_4$ (3)

(R_2 shows a univalent organic radical.)

[Claim 3] (A) A constituent for resist lower layer films according to claim 1 characterized by being hydrolyzate and its condensate, or either of the silane compounds with which a component consists of a compound expressed with a compound and the following general formula (4) which are expressed with the following general formula (3).

$Si(OR_2)_4$ (3)

(R_2 shows a univalent organic radical.)

$R_1nSi(OR_2)_{4-n}$ (4)

(You may differ, even if R_1 and R_2 are the same, and a univalent organic radical is shown, respectively, and n shows an integer of 1-3.)

[Claim 4] (A) A constituent for resist lower layer films according to claim 1 characterized by a content of the (B) component being 1 - 30 weight section to the component (full hydrolysis condensate conversion) 100 weight section.

[Claim 5] A constituent for resist lower layer films according to claim 1 characterized by a content of alcohol contained in a constituent being less than 5 % of the weight.

[Claim 6] A manufacture method of a constituent for resist lower layer films according to claim 3 characterized by mixing a hydrolysis condensate of a compound expressed with a hydrolysis condensate and the following general formula (4) of a compound expressed with the following general formula (3).

$Si(OR_2)_4$ (3)

(R_2 shows a univalent organic radical.)

$R_1nSi(OR_2)_{4-n}$ (4)

(You may differ, even if R_1 and R_2 are the same, and a univalent organic radical is shown, respectively,

and n shows an integer of 1-3.)

[Translation done.]